

ABSTRACT

In one embodiment, a continuously variable speed power transmission includes a rotatable input member, a rotatable output member including a plurality of rearwardly directed output face cams thereon. A reaction control rotor mounted for selective rotation about the input axis includes a plurality of forwardly directed reaction face cams thereon in opposition to the output face cams on the output member. A pericyclic motion converter rotatably mounted for nutational motion about the input axis includes a plurality of load transmitting follower members thereon simultaneously engageable with the output face cams and with the reaction face cams. A control mechanism selectively adjusts the rate of rotation of the reaction control rotor relative to the input member such that relative rotation between the reaction control rotor and the input member results in both rotation and nutation of the pericyclic motion converter about the input axis and thereby results in a continuously variable change of ratio of the rotational speed of the output member relative to the input member. In another embodiment, the pericyclic motion converter is rotatably mounted on an encompassing housing. In either event, the load transmitting members of the pericyclic motion converter kinematically under pure rolling contact traverse a mathematically higher order spherical path of action during each revolution of the input member. In yet other embodiments, cams and rollers may be replaced with gear-type teeth and integrated motor/generator components may be employed to provide alternative drive capability.

10079801-031902